

# SEQUENCE LISTING

<110> The United States of America as Represented by the Secretary of the Department of Health and Human Services, Centers for Disease Control and Prevention

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Steiner, Bret  
Berta, Rodes

<120> COMPOSITIONS AND METHODS FOR DETECTING TREPONEMA PALLIDUM

<130> 6395-61666

<150> PCT/US00/16425

<151> 2000-06-14

<150> US 60/138,981

<151> 1999-06-14

<160> 26

<170> PatentIn version 3.1

<210> 1

<211> 2945

<212> DNA

<213> Treponema pallidum

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<221> CDS

<222> (919)..(2217)

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<223> Subspecies: pallidum (Nichols strain)

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Pro	Ala	Ala	Ala	Ala	Gln	Leu	Gly	Ile	Gly	Val	Tyr	Gln	Ala	Val	Arg			
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Gln	Asp	Gly	Leu	Ser	Leu	Ala	Ser	Leu	Pro	Ser	Arg	Val	Pro	Ala	Arg			
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ccc	gcg	cag	cgt	gat	cct	ctg	tca	tcc	ccg	ccg	gca	ggt	cac	act	gta			1239
Pro	Ala	Gln	Arg	Asp	Pro	Leu	Ser	Ser	Pro	Pro	Ala	Gly	His	Thr	Val			
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ccg	gaa	tat	cgc	gat	acg	gtt	att	ttc	gat	gac	ccg	cgt	ttg	gtt	tcc			1287
Pro	Glu	Tyr	Arg	Asp	Thr	Val	Ile	Phe	Asp	Asp	Pro	Arg	Leu	Val	Ser			
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cct	ttg	tct	cgt	gag	gtg	gag	gac	gcg	ccg	aag	gta	gtg	gag	ccg	gcc			1335
Pro	Leu	Ser	Arg	Glu	Val	Glu	Asp	Ala	Pro	Lys	Val	Val	Glu	Pro	Ala			
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Val	Glu	Pro	Ala	Ser	Glu	Arg	Glu	Gly	Gly	Glu	Arg	Glu	Val	Glu	Asp	
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Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
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Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
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Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

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Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
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Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
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Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser  
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Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
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Gly Glu Arg Glu Val Glu Asn Val Pro Lys Val Val Glu Pro Ala Ser  
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Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val  
245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
275 280 285

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
290 295 300

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
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Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
325 330 335

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
340 345 350

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
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Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly  
370 375 380

Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser  
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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
20 25 30  
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala  
35 40 45  
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60  
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80  
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
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cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
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acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag 384  
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
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gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 432  
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
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ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct 480  
 Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
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gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg 528  
 Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175

gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 576  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 180 185 190

ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 624  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 195 200 205

gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca 672  
 Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
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 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
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Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
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Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
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Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
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Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
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Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
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Ala Pro Asn Gln Phe Arg Lys Pro  
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<223> Subspecies: endemicum (Bosnia strain)

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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His	
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gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca	144
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala	
35 40 45	
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc	192
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr	
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ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc	240
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser	
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ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat	288
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp	
85 90 95	
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat	336
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp	
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acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
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Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
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Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
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Glu Arg Glu Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
165 170 175	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	576
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val	
180 185 190	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Glu Arg Glu	
195 200 205	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	672
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
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Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
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 Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 245 250 255

gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 816  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 260 265 270

ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 864  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 275 280 285

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 Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
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 Ala Pro Asn Gln Phe Arg Lys Pro  
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Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
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Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
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Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
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Ala Pro Asn Gln Phe Arg Lys Pro  
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Pro Ala Ser

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Arg Glu Gly Gly  
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Val Glu Asp Ala  
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Asp Val Pro Lys Val  
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Ser Gln His Thr Lys Gln Pro Ser His Ser  
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Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu  
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<220>  
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 <223> Subspecies: pallidum (Nichols strain)

<400> 19  
 atg ttt gtg cgc agt gac atg ttc ccc aaa aac act gct gtt gaa att 48  
 Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
 1 5 10 15  
 agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30  
 gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala  
 35 40 45  
 cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60  
 ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
 Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80  
 ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95  
 cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110  
 acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag 384  
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125  
 gtg gag gac gcg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 432  
 Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 130 135 140  
 ggg gag cgt gag gtg gag gac gcg ccg aag gta gtg gag ccg gcc tct 480  
 Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160  
 gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg 528  
 Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175  
 gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg 576  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
 180 185 190  
 ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 624  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
 195 200 205  
 gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 672  
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly

210	215	220	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct			720
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser			
225	230	235	240
gag cgt gag gga ggg gag cgt gag gtg gag gac gcg ccg aag gta gtg			768
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val			
	245	250	255
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gcg			816
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala			
	260	265	270
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag			864
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu			
	275	280	285
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga			912
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly			
	290	295	300
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct			960
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser			
305	310	315	320
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg			1008
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val			
	325	330	335
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg			1056
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val			
	340	345	350
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag			1104
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu			
	355	360	365
gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct ggg cat gaa gga			1152
Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly			
	370	375	380
ggg gag cgt gag gtg gag gac gtg ccg ggg gta gtg gag ccg gcc tct			1200
Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser			
385	390	395	400
ggg cat gaa gga ggg gag cgt gag gtc gct tct cag cat acg aag cag			1248
Gly His Glu Gly Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln			
	405	410	415
cca tcc cac tcg gtt tcc aac tca gct ccc aat cag ttt cgg aac cct			1296
Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Asn Pro			
	420	425	430
gag ggg gaa ctc ccc ttt acg ctc cct gac cta tcc gag tca gaa att			1344
Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu Ser Glu Ser Glu Ile			
	435	440	445
gtg gtt ccg gag gaa cag aaa gga cgt gcg cat ccc cag gtg ata ccc			1392
Val Val Pro Glu Glu Gln Lys Gly Arg Ala His Pro Gln Val Ile Pro			
	450	455	460



gca gtc ttt cat gac gct atc cag gtg cag agc att gtc cac cgt tac 1488  
 Ala Val Phe His Asp Ala Ile Gln Val Gln Ser Ile Val His Arg Tyr  
 485 490 495

ggg gta gaa tac ccc atc gca gtg gag cag gac atc cat gaa ggt aag 1536  
 Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp Ile His Glu Gly Lys  
 500 505 510

gtg cgt ttc acc gta tgc gtc ggt cct gtc caa aaa gac gaa cgc ggc 1584  
 Val Arg Phe Thr Val Cys Val Gly Pro Val Gln Lys Asp Glu Arg Gly  
 515 520 525

gcg gta cta gag aac ttc caa agg ttt gga ttc aag gac gcc ttt ctg 1632  
 Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe Lys Asp Ala Phe Leu  
 530 535 540

aaa aag gcg cga tga 1647  
 Lys Lys Ala Arg  
 545

<210> 20  
 <211> 548  
 <212> PRT  
 <213> Treponema pallidum

<220>  
 <221> misc\_feature  
 <223> Subspecies: pallidum (Nichols strain)

<400> 20

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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
115 120 125

Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140

Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val Glu Pro Ala Ser  
145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala Pro Lys Val Val  
245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Ala  
260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
275 280 285

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
290 295 300

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
305 310 315 320

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
325 330 335

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val

340 345 350

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
355 360 365

Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser Gly His Glu Gly  
370 375 380

Gly Glu Arg Glu Val Glu Asp Val Pro Gly Val Val Glu Pro Ala Ser  
385 390 395 400

Gly His Glu Gly Gly Glu Arg Glu Val Ala Ser Gln His Thr Lys Gln  
405 410 415

Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn Gln Phe Arg Asn Pro  
420 425 430

Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu Ser Glu Ser Glu Ile  
435 440 445

Val Val Pro Glu Glu Gln Lys Gly Arg Ala His Pro Gln Val Ile Pro  
450 455 460

Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu Tyr Tyr Val Gln Ile  
465 470 475 480

Ala Val Phe His Asp Ala Ile Gln Val Gln Ser Ile Val His Arg Tyr  
485 490 495

Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp Ile His Glu Gly Lys  
500 505 510

Val Arg Phe Thr Val Cys Val Gly Pro Val Gln Lys Asp Glu Arg Gly  
515 520 525

Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe Lys Asp Ala Phe Leu  
530 535 540

Lys Lys Ala Arg  
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<210> 21  
<211> 1047  
<212> DNA  
<213> Treponema pallidum  
  
<220>

<221> CDS  
 <222> (1)..(1047)  
 <223>

<220>  
 <221> misc\_feature  
 <223> Subspecies: pertenuis (CDC-2 strain)

<400> 21  
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 agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30  
 gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45  
 cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60  
 ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
 Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80  
 ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95  
 cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110  
 acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag 384  
 Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125  
 gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga 432  
 Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
 130 135 140  
 ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct 480  
 Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
 145 150 155 160  
 gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg 528  
 Glu Arg Glu Gly Glu Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
 165 170 175  
 gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg 576  
 Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
 180 185 190  
 ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag 624  
 Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu

195	200	205	
gct gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca			672
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser			
210	215	220	
gct ccc aat cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc			720
Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu			
225	230	235	240
cct gac cta tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga			768
Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly			
	245	250	255
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa			816
Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln			
	260	265	270
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag			864
Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln			
	275	280	285
gtg cag agc att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg			912
Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val			
	290	295	300
gag cag gac atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt			960
Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly			
305	310	315	320
cct gtc caa aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg			1008
Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg			
	325	330	335
ttt gga ttc aag gac gcc ttt ctg aaa aag gcg cga tga			1047
Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg			
	340	345	

<210> 22  
 <211> 348  
 <212> PRT  
 <213> Treponema pallidum  
 <220>  
 <221> misc\_feature  
 <223> Subspecies: pertenu (CDC-2 strain)  
 <400> 22

Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile	
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Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His	
20	30
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala	
35	45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
115 120 125

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
195 200 205

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
210 215 220

Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu  
225 230 235 240

Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly  
245 250 255

Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln  
260 265 270

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln  
275 280 285

Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val  
 290 295 300

Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly  
 305 310 315 320

Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg  
 325 330 335

Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg  
 340 345

<210> 23  
 <211> 1287  
 <212> DNA  
 <213> *Treponema pallidum*

<220>  
 <221> CDS  
 <222> (1)..(1287)  
 <223>

<220>  
 <221> misc\_feature  
 <223> Subspecies: *endemicum* (Bosnia strain)

<400> 23  
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 1 5 10 15  
 agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
 Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30  
 gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
 Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala  
 35 40 45  
 cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
 Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60  
 ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
 Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80  
 ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
 Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95  
 cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
 Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	432
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
130 135 140	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	480
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
145 150 155 160	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	528
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
165 170 175	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	576
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val	
180 185 190	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	624
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu	
195 200 205	
gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga	672
Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly	
210 215 220	
ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct	720
Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser	
225 230 235 240	
gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg	768
Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val	
245 250 255	
gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg	816
Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val	
260 265 270	
ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag	864
Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu	
275 280 285	
gtc gct tct cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca	912
Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser	
290 295 300	
gct ccc aat cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc	960
Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu	
305 310 315 320	
cct gac cta tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga	1008
Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly	
325 330 335	
cgt gcg cat ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa	1056
Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln	
340 345 350	
cct ggt gaa tac tac gta cag att gca gtc ttt cat gac gct atc cag	1104



Pro	Gly	Glu	Tyr	Tyr	Val	Gln	Ile	Ala	Val	Phe	His	Asp	Ala	Ile	Gln	
		355					360					365				
gtg	cag	agc	att	gtc	cac	cgt	tac	ggg	gta	gaa	tac	ccc	atc	gca	gtg	1152
Val	Gln	Ser	Ile	Val	His	Arg	Tyr	Gly	Val	Glu	Tyr	Pro	Ile	Ala	Val	
		370				375					380					
gag	cag	gac	atc	cat	gaa	ggg	aag	gtg	cgt	ttc	acc	gta	tgc	gtc	ggt	1200
Glu	Gln	Asp	Ile	His	Glu	Gly	Lys	Val	Arg	Phe	Thr	Val	Cys	Val	Gly	
					390					395					400	
cct	gtc	caa	aaa	gac	gaa	cgc	ggc	gcg	gta	cta	gag	aac	ttc	caa	agg	1248
Pro	Val	Gln	Lys	Asp	Glu	Arg	Gly	Ala	Val	Leu	Glu	Asn	Phe	Gln	Arg	
				405					410					415		
ttt	gga	ttc	aag	gac	gcc	ttt	ctg	aaa	aag	gcg	cga	tga				1287
Phe	Gly	Phe	Lys	Asp	Ala	Phe	Leu	Lys	Lys	Ala	Arg					
			420					425								

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<210> 24
<211> 428
<212> PRT
<213> Treponema pallidum

<220>
<221> misc_feature
<223> Subspecies: endemicum (Bosnia strain)

<400> 24
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Ser	Asn	Leu	Glu 20	Lys	Asn	Ala	Lys	Ala 25	Gln	Ala	Val	Val	Ile 30	Gly	His
Ala	Gly	Ile 35	Pro	Gly	Leu	Leu	Val 40	Ser	Leu	Ala	Pro	Ala 45	Ala	Ala	Ala
Gln	Leu 50	Gly	Ile	Gly	Val	Tyr 55	Gln	Ala	Val	Arg	Val 60	Arg	Val	Arg	Thr
Leu 65	Gly	Thr	Val	Arg	Gly 70	Gly	Ser	Gln	Thr	Ser 75	Gln	Asp	Gly	Leu 80	Ser
Leu	Ala	Ser	Leu	Pro 85	Ser	Arg	Val	Pro	Ala 90	Arg	Pro	Ala	Gln	Arg 95	Asp
Pro	Leu	Ser	Ser 100	Pro	Pro	Ala	Gly	His 105	Thr	Val	Pro	Glu	Tyr 110	Arg	Asp
Thr	Val	Ile 115	Phe	Asp	Asp	Pro	Arg	Leu 120	Val	Ser	Pro	Leu 125	Ser	Arg	Glu

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
130 135 140

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
145 150 155 160

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
165 170 175

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
180 185 190

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
195 200 205

Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly  
210 215 220

Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser  
225 230 235 240

Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val  
245 250 255

Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val  
260 265 270

Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu  
275 280 285

Val Ala Ser Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser  
290 295 300

Ala Pro Asn Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu  
305 310 315 320

Pro Asp Leu Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly  
325 330 335

Arg Ala His Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln  
340 345 350

Pro Gly Glu Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln  
355 360 365

Val Gln Ser Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val  
370 375 380

Glu Gln Asp Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly  
385 390 395 400

Pro Val Gln Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg  
405 410 415

Phe Gly Phe Lys Asp Ala Phe Leu Lys Lys Ala Arg  
420 425

<210> 25  
<211> 1182  
<212> DNA  
<213> *Treponema pallidum*

<220>  
<221> CDS  
<222> (1)..(1182)  
<223>

<220>  
<221> misc\_feature  
<223> Subspecies: *pertenue* (CDC-1 strain)

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Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
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agc aac tta gaa aag aat gcc aag gct cag gca gtg gtt att ggg cac 96  
Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
20 25 30  
gca ggg atc ccc ggt ctt cta gtt agc ctt gca ccc gct gct gca gca 144  
Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala  
35 40 45  
cag ctt ggg att ggc gta tac caa gct gtg cgt gta cgc gta cgt acc 192  
Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
50 55 60  
ttg ggt acc gtg cgc ggt ggg tct caa aca agt cag gac gga ctg tcc 240  
Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
65 70 75 80  
ctt gca tct ttg ccg tcc cgt gtg cct gcg cgc ccc gcg cag cgt gat 288  
Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
85 90 95  
cct ctg tca tcc ccg ccg gca ggt cac act gta ccg gaa tat cgc gat 336  
Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
100 105 110

acg gtt att ttc gat gac ccg cgt ttg gtt tcc cct ttg tct cgt gag	384
Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu	
115 120 125	
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc	432
Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala	
130 135 140	
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta	480
Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val	
145 150 155 160	
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtg gag gac	528
Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp	
165 170 175	
gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt	576
Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg	
180 185 190	
gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc tct gag cgt gag	624
Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala Ser Glu Arg Glu	
195 200 205	
gga ggg gag cgt gag gtg gag gac gtg ccg aag gta gtg gag ccg gcc	672
Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala	
210 215 220	
tct gag cgt gag gga ggg gag cgt gag gtg gag gac gtg ccg aag gta	720
Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val	
225 230 235 240	
gtg gag ccg gcc tct gag cgt gag gga ggg gag cgt gag gtc gct tct	768
Val Glu Pro Ala Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Ala Ser	
245 250 255	
cag cat acg aag cag cca tcc cac tcg gtt tcc aac tca gct ccc aat	816
Gln His Thr Lys Gln Pro Ser His Ser Val Ser Asn Ser Ala Pro Asn	
260 265 270	
cag ttt cgg aac cct gag ggg gaa ctc ccc ttt acg ctc cct gac cta	864
Gln Phe Arg Asn Pro Glu Gly Glu Leu Pro Phe Thr Leu Pro Asp Leu	
275 280 285	
tcc gag tca gaa att gtg gtt ccg gag gaa cag aaa gga cgt gcg cat	912
Ser Glu Ser Glu Ile Val Val Pro Glu Glu Gln Lys Gly Arg Ala His	
290 295 300	
ccc cag gtg ata ccc gag ggt gcg cca cgt gga ctg caa cct ggt gaa	960
Pro Gln Val Ile Pro Glu Gly Ala Pro Arg Gly Leu Gln Pro Gly Glu	
305 310 315 320	
tac tac gta cag att gca gtc ttt cat gac gct atc cag gtg cag agc	1008
Tyr Tyr Val Gln Ile Ala Val Phe His Asp Ala Ile Gln Val Gln Ser	
325 330 335	
att gtc cac cgt tac ggg gta gaa tac ccc atc gca gtg gag cag gac	1056
Ile Val His Arg Tyr Gly Val Glu Tyr Pro Ile Ala Val Glu Gln Asp	
340 345 350	

atc cat gaa ggt aag gtg cgt ttc acc gta tgc gtc ggt cct gtc caa 1104  
 Ile His Glu Gly Lys Val Arg Phe Thr Val Cys Val Gly Pro Val Gln  
 355 360 365

aaa gac gaa cgc ggc gcg gta cta gag aac ttc caa agg ttt gga ttc 1152  
 Lys Asp Glu Arg Gly Ala Val Leu Glu Asn Phe Gln Arg Phe Gly Phe  
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 Lys Asp Ala Phe Leu Lys Lys Ala Arg  
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<210> 26  
 <211> 393  
 <212> PRT  
 <213> Treponema pallidum

<220>  
 <221> misc\_feature  
 <223> Subspecies: pertenue (CDC-1 strain)

<400> 26

Met Phe Val Arg Ser Asp Met Phe Pro Lys Asn Thr Ala Val Glu Ile  
 1 5 10 15

Ser Asn Leu Glu Lys Asn Ala Lys Ala Gln Ala Val Val Ile Gly His  
 20 25 30

Ala Gly Ile Pro Gly Leu Leu Val Ser Leu Ala Pro Ala Ala Ala Ala  
 35 40 45

Gln Leu Gly Ile Gly Val Tyr Gln Ala Val Arg Val Arg Val Arg Thr  
 50 55 60

Leu Gly Thr Val Arg Gly Gly Ser Gln Thr Ser Gln Asp Gly Leu Ser  
 65 70 75 80

Leu Ala Ser Leu Pro Ser Arg Val Pro Ala Arg Pro Ala Gln Arg Asp  
 85 90 95

Pro Leu Ser Ser Pro Pro Ala Gly His Thr Val Pro Glu Tyr Arg Asp  
 100 105 110

Thr Val Ile Phe Asp Asp Pro Arg Leu Val Ser Pro Leu Ser Arg Glu  
 115 120 125

Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val Val Glu Pro Ala  
 130 135 140

Ser Glu Arg Glu Gly Gly Glu Arg Glu Val Glu Asp Val Pro Lys Val

